The Crossroads of Nutrition and Culture

As the U.S. population becomes more diverse, studying the nutrition and health needs of immigrant groups becomes more important. Several researchers at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts University in Boston have been focusing on the nutritional epidemiology of Hispanic elders. Hispanics are a fast-growing group in the United States.

HNRCA researchers report that elderly Hispanics of Caribbean origin were significantly more likely to be vitamin B_{12} deficient than were non-Hispanic whites, based on a study of data collected in the volunteers' homes. Symptoms of B_{12} deficiency range from decreased memory and balance disturbances to nerve damage and cognitive decline.

The study was conducted by Katherine Tucker, director of HNRCA's Dietary Assessment Research Program, and was published in the *Journal of Nutrition* last year. Tucker and coauthors examined data collected from 347 Puerto Ricans, 102 Dominicans, and 154 non-Hispanic whites living in Massa chusetts and aged 60 to 93 years.

One reason for the lower levels is that the B_{12} in natural sources such as meat, eggs, and dairy products is tightly bound to the proteins contained in those foods. That means unless the consumer has enough stomach acid to break those bonds, he or she may not absorb adequate B_{12}. Aging and acid-blockers contribute to the gradual lessening of B_{12} absorption.

"Sources of vitamin B_{12} that are not bound to protein, such as supplements and fortified cereals, appear to be protective," says Tucker. "For most people, taking a multivitamin or regularly eating B_{12}-fortified foods, such as breakfast cereal, should provide protection against deficiency." She notes that those who took supplements with B_{12} or ate cereal more than four times per week were significantly less likely to have low levels of B_{12}.

In another study, HNRCA researchers reported significant results from a study involving 60 Hispanic men and women over 55 with an average 9-year history of type-2 diabetes. Indeed, among Hispanics, diabetes prevalence is about double that among non-Hispanic whites.

The investigators asked half the volunteers to serve as controls and half to undergo progressive resistance training, or PRT, such as weight lifting, three times a week for 16 weeks. Before participation, the volunteers' health was screened through an in-depth physical examination and electrocardiogram.

In the exercise group, PRT reduced the requirement for diabetes medication, reduced abdominal fat and systolic blood pressure, increased lean tissue mass, and increased muscle strength.

The findings were reported in the December issue of *Diabetes Care* by principal investigator Carmen Castaneda Sceppa. She is a physician and acting director of the Nutrition, Physiology, and Sarcopenia Laboratory at the HNRCA.

"Our results showed that dosages of prescribed diabetes medications were reduced in 72 percent of exercisers, compared with the control group," says Castaneda. Moreover, by study's end, the exercisers were closer to meeting the Surgeon General's recommendations for physical activity. The researchers concluded that further studies are needed to determine the optimal intensity of PRT to produce maximal benefits while ensuring safety.—By **Rosalie Marion Bliss,** ARS.

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Progressive resistance training in some study groups has been shown to help reduce the need for diabetes medication.